

ISSUED MAY 24, 1912.

# **Hawaii Agricultural Experiment Station, HONOLULU.**

---

**E. V. WILCOX, Special Agent in Charge.**

---

## **Index to Publications of the Hawaii Agricultural Experiment Station, July 1, 1901, to December 31, 1911.**

**By A. T. LONGLEY, Clerk.**

---

**UNDER THE SUPERVISION OF  
OFFICE OF EXPERIMENT STATIONS, U. S. DEPARTMENT  
OF AGRICULTURE.**

---

(Under the supervision of A. C. TRUE, Director of the Office of Experiment Stations, United States Department of Agriculture.)

WALTER H. EVANS, Chief of Division of Insular Stations, Office of Experiment Stations.

## STATION STAFF.

---

E. V. Wilcox, Special Agent in Charge.  
J. E. Higgins, Horticulturist.  
W. P. Kelley, Chemist.  
C. K. McClelland, Agronomist.  
D. T. Fullaway, Entomologist.  
W. T. McGeorge, Assistant Chemist.  
C. J. Hunn, Assistant Horticulturist.  
C. A. Sahr, Assistant in Agronomy.  
Alice R. Thompson, Assistant Chemist.  
V. S. Holt, Assistant in Horticulture.  
F. A. Clowes, Superintendent Hawaii Sub-stations.  
W. A. Anderson, Superintendent Rubber Sub-station.  
J. de C. Jerves, Superintendent Homestead Sub-station.  
J. K. Clark, Superintendent Waipio Sub-station.  
A. T. Longley, Clerk.

## ANNUAL REPORTS.

---

- FIRST ANNUAL REPORT, 1901,**  
Establishment of Station and General Statement of Station Work. Jared G. Smith, Special Agent in Charge. Pp. 361-379, pls. 25-32. (Reprint from An. Rept. Office of Expt. Stations, 1901.)
- SECOND ANNUAL REPORT, 1902,**  
General Statement of Station Work. Jared G. Smith, Special Agent in Charge. Pp. 309-330, pls. 20-27. (Reprint from An. Rept. Office of Expt. Stations, 1902.)
- THIRD ANNUAL REPORT, 1903.**  
General Statement of Station Work. Jared G. Smith, Special Agent in Charge. Pp. 391-418, pls. 14-17. (Reprint from An. Rept. Office of Expt. Stations, 1903.)
- FOURTH ANNUAL REPORT, 1904.**  
General Statement of Station Work. Jared G. Smith, Special Agent in Charge. Pp. 361-382, pls. 14-15. (Reprint from An. Rept. Office of Expt. Stations, 1904.)
- FIFTH ANNUAL REPORT, 1905,**  
General Statement of Station Work. Jared G. Smith, Special Agent in Charge. Pp. 66, pls. 4. (Office of Experiment Stations—Bul. No. 170.)
- SIXTH ANNUAL REPORT, 1906.**  
General Statement of Station Work. Jared G. Smith, Special Agent in Charge. Pp. 88, pls. 7.
- SEVENTH ANNUAL REPORT, 1907.**  
General Statement of Station Work. Jared G. Smith, Special Agent in Charge. Pp. 90, pls. 9, figs. 3.
- EIGHTH ANNUAL REPORT, 1908,**  
General Statement of Station Work. E. V. Wilcox, Special Agent in Charge. Pp. 84, pls. 7.
- NINTH ANNUAL REPORT, 1909,**  
General Statement of Station Work. E. V. Wilcox, Special Agent in Charge. Pp. 76, pls. 6, figs. 8.
- TENTH ANNUAL REPORT, 1910,**  
General Statement of Station Work. E. V. Wilcox, Special Agent in Charge. Pp. 64, pls. 8, figs. 4.

BULLETINS.

---

- BULLETIN No. 1.—December 1, 1901. Chickens and Their Diseases in Hawaii. T. F. Sedgwick, Agriculturist. Pp. 24.
- 2.—July 25, 1902. The Root Rot of Taro. T. F. Sedgwick, Agriculturist. Pp. 22, pls. 2.
- 3.—August 22, 1902. Insecticides for Use in Hawaii. D. L. Van Dine, Entomologist. Pp. 26, pls. 1, figs. 7.
- 3.—(Revised.) January 8, 1904. Insecticides for Use in Hawaii. D. L. Van Dine, Entomologist. Pp. 21, pls. 1, figs. 7.
- 4.—March 5, 1903. The Cultivation of Sisal in Hawaii. Frank E. Conter, Assistant. Pp. 32, pls. 5, figs. 4.
- 5.—January 23, 1904. A Sugar-cane Leaf-hopper in Hawaii. D. L. Van Dine, Entomologist. Pp. 29, figs. 8.
- 6.—May 25, 1904. Mosquitoes in Hawaii. D. L. Van Dine, Entomologist. Pp. 30, figs. 12.
- 7.—October 18, 1904. The Banana in Hawaii. J. E. Higgins, Horticulturist. Pp. 53, pls. 9, figs. 9.
- 8.—January 27, 1905. Methods of Milking. F. G. Krauss, Instructor in Agriculture, Kamehameha Boys' School, Honolulu. Pp. 15, figs. 5.
- 9.—September 1, 1905. Citrus Fruits in Hawaii. J. E. Higgins, Horticulturist. Pp. 32, pls. 3, figs. 7.
- 10.—May 31, 1905. Insect Enemies of Tobacco in Hawaii. D. L. Van Dine, Entomologist. Pp. 16, figs. 6.
- 11.—January 1, 1906. The Black Wattle (*Acacia decurrens*) in Hawaii. Jared G. Smith, Special Agent in Charge. Pp. 16, pls. 3.
- 12.—January 30, 1906. The Mango in Hawaii. J. E. Higgins, Horticulturist. Pp. 32, pls. 10.
- 13.—March 15, 1906. The Composition of Some Hawaiian Feeding Stuffs. Edmund C. Shorey, Chemist. Pp. 24.

- 14.—May 6, 1907. Marketing Hawaiian Fruits. J. E. Higgins, Horticulturist. Pp. 44, pls. 8.
- 15.—October 22, 1907. Cultivation of Tobacco in Hawaii. Jared G. Smith, Special Agent in Charge, and Charles R. Blacow, in Charge of Tobacco Investigations. Pp. 30, pls. 3, figs. 4.
- 16.—July 3, 1908. The Ceara Rubber Tree in Hawaii. Jared G. Smith, Special Agent in Charge, and Q. Q. Bradford, Assistant in Rubber Investigations. Pp. 30, pls. 4.
- 17.—June 30, 1908. Hawaiian Honeys. D. L. Van Dine, Entomologist, and Alice R. Thompson, Assistant Chemist. Pp. 22, pls. 1.
- 18.—May 5, 1909. Insects of Cotton in Hawaii. D. T. Fullaway, Entomologist. Pp. 28, figs. 18.
- 19.—December 28, 1909. Experiments in Tapping Ceara Rubber Trees. E. V. Wilcox, Special Agent in Charge. Pp. 20.
- 20.—December 3, 1909. Shield Budding the Mango. J. E. Higgins, Horticulturist. Pp. 16, pls. 2, figs. 4.
- 21.—April 5, 1910. A Study of the Composition of the Rice Plant. W. P. Kelley, Chemist, and Alice R. Thompson, Assistant Chemist. Pp. 51.
- 22.—December 27, 1910. Insects Attacking the Sweet Potato in Hawaii. D. T. Fullaway, Entomologist. Pp. 31, figs. 10.
- 23.—September 20, 1911. Leguminous Crops for Hawaii. F. G. Krauss, Agronomist. Pp. 31, pls. 7.
- 24.—June 16, 1911. The Assimilation of Nitrogen by Rice. W. P. Kelley, Chemist. Pp. 20.
- 25.—December 16, 1911. The Avocado in Hawaii. J. E. Higgins, Horticulturist; Chester J. Hunn, Assistant Horticulturist, and Valentine S. Holt, Assistant in Horticulture. Pp. 48, pls. 7, figs. 12.

#### PRESS BULLETINS.

---

PRESS BUL. No. 1.—January 2, 1903. The Function of the Experiment Station. Jared G. Smith, Special Agent in Charge. Pp. 1.

- 2.—No date. Castor Bean. Jared G. Smith, Special Agent in Charge. Pp. 1.
- 3.—No date. Preliminary Experiments with the "Quick Blight" of the Potato. T. F. Sedgwick. Pp. 1.
- 4.—No date. Na Hoao No Ke Pale Ana I Ka Pala O Ke Kalo (The Root Rot of Taro). T. F. Sedgwick. Pp. 1.
- 5.—No date. Manila Hemp or Abaca. Jared G. Smith, Special Agent in Charge. Pp. 1.
- 6.—August 10, 1903. Vanilla Cultivation in Hawaii. Frank E. Conter, Assistant. Pp. 8, pls. 2.
- 7.—September 14, 1903. Mosquitoes. D. L. Van Dine, Entomologist. Pp. 1, figs. 2. (Published in English, Portuguese, Hawaiian, Chinese and Japanese.)
- 8.—October 21, 1903. The Mealy Bug, or "Pear Blight" of the Alligator Pear. D. L. Van Dine, Entomologist. Pp. 6, figs. 3.
- 9.—March 16, 1904. Two Plant Diseases in Hawaii. Jared G. Smith, Special Agent in Charge. Pp. 6.
- 10.—August 11, 1904. The Pineapple Scale (*Diaspis bromeliae* Kerner). D. L. Van Dine, Entomologist. Pp. 6, pls. 1,
- 11.—January 5, 1905. The Common Liver Fluke in Hawaii (*Distoma hepaticum*). Jared G. Smith, Special Agent in Charge, and D. L. Van Dine, Entomologist. Pp. 8, pls. 2.
- 12.—April 10, 1905. Tobacco Experiments in Hamakua, Hawaii. Jared G. Smith, Special Agent in Charge, and C. R. Blacow, in Charge of Tobacco Investigation. Pp. 24.
- 13.—July 20, 1905. Rubber in Hawaii. Jared G. Smith, Special Agent in Charge. Pp. 12.
- 14.—October 19, 1905. Fuller's Rose Beetle (*Aramigus fulleri* Horn.). D. L. Van Dine, Entomologist. Pp. 8, figs. 1.
- 15.—January 2, 1906. Lime an Essential Factor in Forage. Edmund C. Shorey, Chemist. Pp. 6.

- 16.—January 13, 1906. The Avocado Mealy-bug (*Pseudococcus nipae* Mask.). D. L. Van Dine, Entomologist. Pp. 12, figs. 3. (Reprint of Press Bulletin No. 8.)
- 17.—August 14, 1906. The Mango Weevil (*Cryptorhynchus mangiferae* Fabr.). D. L. Van Dine, Entomologist. Pp. 12, pls. 2.
- 18.—October 10, 1906. All About the Hawaii Experiment Station. Jared G. Smith, Special Agent in Charge. Pp. 14.
- 19.—January 19, 1907. A Preliminary Report on Rice Investigations. F. G. Krauss, Expert in Charge of Rice Investigations. Pp. 8.
- 20.—July 25, 1907. The Introduction of Top-Minnows (Natural Enemies of Mosquitoes) into the Hawaiian Islands. D. L. Van Dine, Entomologist. Pp. 10, figs. 3.
- 21.—No date. Fruit Marketing Investigations in 1907. J. E. Higgins, Horticulturist. Pp. 27, figs. 1.
- 22.—No date. Pineapple Shipping Experiments in 1908. J. E. Higgins, Horticulturist. Pp. 6, pls. 1.
- 23.—No date. The Influence of Manganese on the Growth of Pineapples. W. P. Kelley, Chemist. Pp. 14.
- 24.—No date. A Preliminary Report on Cotton Experiments. F. G. Krauss, Expert in Agriculture. Pp. 16.
- 25.—No date. Carbon Bisulphid for Killing Weeds. E. V. Wilcox, Special Agent in Charge. Pp. 4.
- 26.—No date. The Algaroba in Hawaii. E. V. Wilcox, Special Agent in Charge. Pp. 8.
- 27.—No date. The Use of Insecticides in Hawaii. D. T. Fullaway, Entomologist. Pp. 8.
- 28.—No date. Peanuts in Hawaii. F. G. Krauss, Agronomist. Pp. 11, pls. 2.
- 29.—No date. The Management of Pineapple Soils. W. P. Kelley, Chemist. Pp. 10.
- 30.—No date. Killing Weeds with Arsenite of Soda. E. V. Wilcox, Special Agent in Charge. Pp. 16.

- 31.—No date. Brief Instructions for Farm Butter Makers. F. A. Clowes, Superintendent Hawaii Sub-stations. Pp. 12, figs. 4.
- 32.—No date. Cultural Methods for Controlling the Cotton Boll Worm. C. K. McClelland, Agronomist, and C. A. Sahr, Assistant in Agronomy. Pp. 8, figs. 2.

#### SPECIAL BULLETINS.

- A Cultura da Banana (The Cultivation of the Banana). E. V. Wilcox, Special Agent in Charge. Pp. 8. (1911.)
- A Cultura da Uva (The Cultivation of the Grape). J. E. Higgins, Horticulturist. Pp. 15, figs. 3. (1911.)
- No Ka Hooulu Ana I Ka Maia (The Cultivation of the Banana). E. V. Wilcox, Special Agent in Charge. Pp. 12. (1911.)
- No Ka Hooulu Ana I Ke Kalo (The Cultivation of Taro). E. V. Wilcox, Special Agent in Charge, and F. A. Clowes, Superintendent Hawaii Sub-stations. Pp. 16. (1911.)
- The Grazing Industry. E. V. Wilcox, Special Agent in Charge. Pp. 92. (1911.)

#### REPRINTS.

- The Economic Seaweeds of Hawaii and Their Food Values. Minnie Reed, Science Teacher Kamehameha Manual Training Schools. Pp. 61-88, pls. 4-7. (Reprinted from Annual Report for 1906 )



## A.

\*Publication.

Page.

Abaca. <i>See</i> Manila hemp.		
<i>Acacia decurrens</i> . <i>See</i> Black Wattle.		
<i>Adoretus umbrosus</i> . <i>See</i> Japanese beetle.		
<i>Agave</i> . <i>See</i> Sisal.		
Agriculture, diversified, summary .....	R 1909	9
<i>Agrotis ypsilon</i> . <i>See</i> Cutworms.		
Alfalfa, chemical composition .....	B 13	9- 18
requirements and cultural methods .....	B 23	9- 16
suitability for Hawaiian conditions .....	R 1902	312
varieties grown in Hawaii .....	B 23	6- 9
<i>Algae</i> . <i>See</i> also Seaweed.		
<i>Algae</i> , edible, list .....	R 1906	86
native and Japanese species, comparison ...	R 1906	82
use as food .....	R 1906	62
Algaroba bean weevil parasites, distribution .....	R 1910	20
beans as chicken feed .....	B 1	22
beans as stock feed, chemical composition. B 13		13- 19
methods of grinding .....	R 1909	15
use as stock feed .....	PB 26	4
flowers attacked by caterpillars .....	R 1909	20
honey, source and composition .....	B 17	8- 16
insects, injurious .....	R 1908	35
introductions, botany and use .....	PB 26	1
meal as stock food, chemical composition B 13		13- 19
Alligator pear. <i>See</i> Avocado.		
Animal diseases .....	R 1903	401-402
<i>Anomalochrysa hepatica</i> , parasitic on leaf hopper. B 5		24
Anona group, Hawaiian varieties .....	R 1907	54
<i>Aphidae</i> , Hawaiian, synopsis .....	R 1909	20
Aphids injurious to bananas .....	B 7	32
injurious to cotton, remedies .....	B 18	9- 10
injurious to mangoes .....	B 12	24
Aphis, destruction of corn, 1901 .....	R 1902	324
Apiculture investigations .....	R 1906	24
Apples, injurious insects .....	R 1907	45
	R 1908	33
Arsenate of lead as an insecticide, formula .....	B 3	16
of soda as an insecticide .....	B 3	14
Arsenic and bran mash as an insecticide .....	B 3	19- 20
Arsenite of soda for killing weeds .....	R 1910	18
	PB 30	7
Asparagus, injurious insects .....	R 1908	35
Avocado, botany and history .....	B 25	8- 9
breeding .....	B 25	32
cultural requirements .....	B 25	12
damage by winds .....	R 1902	321

\*R, Report; B, Bulletin; PB, Press Bulletin; SB, Special Bulletin.

	*Publication.	Page.
disease control .....	R 1910	27
	B 25	23
fruiting seasons .....	B 25	27
insects, injurious, list .....	R 1904	375
	R 1905	46
	R 1908	33
insects, injurious, control .....	B 25	21
	R 1910	26
insecticides and fungicides .....	B 25	24
mealy bug, life history, natural enemies, remedies .....	PB 8	1
	PB 16	1
picking, grading and marketing .....	B 25	26- 28
	B 14	28- 21
propagation, budding, grafting, cuttings, etc. ....	R 1910	25
	B 25	12- 19
shipping and marketing experiments ....	B 14	28- 32
	R 1904	381
	PB 21	26
transplanting, tillage, irrigation, etc. ....	B 25	16- 21
use as food .....	B 25	34
	R 1902	321
varieties, descriptions .....	R 1910	16, 27
	B 25	37

## B.

Baling tobacco .....	B 15	24- 25
Bamboo, insects, injurious .....	R 1908	34
Bananas and cacao, poor growth on Hawaii .....	R 1906	15
Banana anthracnose .....	B 7	30- 31
Bluefields, cooperative experiments with..	R 1904	363, 379
Bluefields, distribution .....	R 1906	11, 34
botanical sketch .....	B 7	39- 42
butts, chemical composition .....	B 13	11, 17
climatic and soil requirements .....	B 7	11- 12
cultivation, shipping, etc. (Hawaiian and Portuguese) .....	SB Bananas	1- 8
	R 1904	363
cultural methods .....	B 7	12- 30
diseases, insects and other enemies .....	B 7	30- 32
experiments in Hilo .....	R 1905	59- 60
fertilizer experiments .....	B 7	25- 26
fruit, chemical analysis .....	B 7	27- 28
harvesting crop .....	B 7	28- 29
insects, injurious .....	R 1906	30
	R 1905	46
	R 1908	33
	R 1907	45
	R 1904	376

\*R, Report; B, Bulletin; PB, Press Bulletin; SB, Special Bulletin.

	*Publication.	Page.
injuries by nematode worms.....	R 1905	65
leaves, chemical analysis .....	B 7	27- 28
products, uses .....	B 7	32- 36
ripe rot, description and control.....	R 1905	64
scab, description and treatment .....	R 1905	65
shipping and marketing .....	B 7	30- 39
	B 14	38- 44
	PB 21	24
source of supply .....	B 14	35- 37
tops, chemical composition .....	B 13	11- 19
varieties, introduced .....	B 7	42- 46
varieties, native .....	R 1904	379
cooking, merits .....	B 14	38
varieties, on station grounds .....	R 1908	44
Bark beetles injurious to Ceara rubber trees .....	B 16	30
Barley, injurious insects, remedies .....	R 1910	22
Bats as enemies of mosquitoes .....	B 6	25
Bean weevil parasites, introduction and propagation .....	R 1909	19
	R 1910	17
Beekeeping, composition and classification of honey .....	R 1907	39
condition of industry .....	R 1905	40- 41
	R 1908	23
investigations, 1906 .....	R 1906	24
investigations, 1908 .....	R 1908	12
partial list of honey producing plants. .....	R 1905	41
Bees, foul brood regulations .....	R 1907	41
Bermuda grass, chemical composition.....	B 13	8- 18
Black fly, injurious to citrus trees .....	B 9	26
rot of Irish potatoes, remedy.....	R 1902	312
wattle bark, tannin content .....	B 11	11- 12
cultivation, harvesting, yield .....	B 11	7- 11
injurious insects .....	B 11	16
	R 1908	35
tanbark extracts .....	B 11	12- 13
production .....	R 1905	11- 12
use of wood after removal of bark... ..	B 11	14- 16
Blacow, Charles R.		
Cultivation of Tobacco in Hawaii. (Joint Author).....	B 15	1- 30
Tobacco Experiments in Hamakua, Hawaii. (Joint Author).....	PB 11	1- 8
Blight, mango, description and control .....	B 12	22- 23
Bollworm. See also Cotton bollworm.		
Bollworm, cotton, clean culture methods for control .....	B 18	20- 21
	PB 32	1- 8
Indian, injurious to cotton, life history, remedies .....	B 18	26- 30

	*Publication.	Page.
Bordeaux mixture, formula .....	B 12	23
	B 9	24- 25
	B 3	13
remedy for brown-eyed disease		
of coffee .....	PB 9	5
potato blight .....	R 1902	312
mango blight .....	R 1908	47
<i>v.</i> Paris green as an insecticide	B 3	13
Borer, banana .....	B 7	32
Bougainvillaea disease, treatment .....	R 1910	40
Bradford, Q. Q.		
Ceara Rubber Tree in Hawaii, The. (Joint		
Author).....	B 16	1- 30
Brewers' grains as stock food, chemical composition	B 13	13- 19
Broom corn, distribution of seed .....	R 1910	18
Bruchus sp., injurious to black wattle .....	B 11	16
Budding, shield budding of mangoes .....	B 20	1- 16
Bud-wood preservation .....	R 1909	48
Buffaloes on public lands of United States in 1870..	SB Grazing	28
Buffalo grass as stock food, chemical composition..	B 13	8- 20
Buhach as an insecticide .....	B 3	15
Butter, brief instruction for making .....	PB 31	1- 12

## C.

Cabbage, injurious insects .....	R 1908	31
rot, affected by climatic conditions .....	R 1904	381
Cacao, cooperative experiments .....	R 1904	363, 381
	R 1905	59
	R 1906	15
Cane borer, injury to cane, remedies .....	B 3	7
<i>Capsicum annuum</i> ...See Peppers.		
<i>Capsicum frutescens</i> . See Peppers.		
Carambola, description .....	R 1907	55
Carbohydrates in rice plants .....	B 21	43- 48
Carbon bisulphid as an insecticide, formula .....	B 3	24
for killing weeds .....	PB 25	1- 4
	R 1909	15
gas as an insecticide .....	B 3	20- 21
<i>Carica quercifolia</i> , papain content .....	R 1907	55
<i>Carissa arduina</i> , description .....	R 1909	57
use as a hedge plant .....	R 1910	38
Cassava, chemical composition .....	B 13	11- 20
cultivation, yields, use as food .....	R 1905	23- 24
injurious insects .....	R 1905	48
	R 1908	31
starch, production and manufacture.....	R 1902	323
use as pig feed .....	R 1902	323

	*Publication.	Page.
Cassie or Klu bean, flowers for perfume .....	R 1901	377
<i>Castina licus</i> . See Borer, banana.		
Castor bean, history, uses and varieties, cultivation.	PB 2	1
industry, yields, and value .....	R 1901	379
	R 1902	322
	R 1903	404-405
Catch crops for rubber plantations .....	B 16	12- 13
Caterpillars affecting algaroba flowers .....	R 1909	20
leaf feeding, injurious to cotton, reme-		
dies .....	B 18	21- 22
Cattle, forage crops for feed .....	R 1902	311
injurious insects .....	R 1907	47
	R 1908	36
losses by liver fluke .....	R 1903	401
production in the United States .....	SB Grazing	67- 83
Ceara rubber cultivation .....	B 16	1- 30
injurious insects .....	R 1908	35
yields of latex .....	B 19	7- 10
<i>Centrosema plumeri</i> , a green manuring crop .....	R 1905	63
Chemical analyses, miscellaneous .....	R 1905	27
Chemical investigations .....	R 1904	364-372
	R 1905	25
	R 1906	15
	R 1907	12
	R 1908	10
	R 1909	10
<i>Chelonus blackburni</i> , parasitic on bollworm .....	B 18	20- 21
Cherimoya, description and cultivation .....	R 1907	54
Chickens, as insect destroyers .....	B 1	8
breeds for tropics .....	B 1	21
breeds in Hawaii .....	B 1	9, 10
condition of industry.....	B 1	7- 9
diseases, prevalence .....	R 1902	310
diseases, remedies .....	B 1	7- 23
feeds and shelter .....	B 1	22
lice and vermin, remedies .....	B 1	21, 23
pox. See Sore head.		
raising .....	B 1	14- 18
sore head, remedies and preventatives...	B 1	11- 18
<i>Chloris elegans</i> , chemical composition .....	B 13	8- 18
<i>Chrysopa microphya</i> , parasitic on leaf hopper .....	B 5	24
Cigarette beetle, injurious to stored tobacco, reme-		
dies .....	B 10	14- 16
<i>Citrus decumana</i> . See Pomelo.		
Citrus fruits, diseases, remedies .....	B 9	22- 28
favorable conditions for culture .....	R 1905	61
cultivation and marketing .....	B 9	7- 21

	*Publication.	Page.
insects, injurious, remedies .....	R 1904	375
	R 1905	46
	R 1908	32
	R 1909	47
	B 9	25- 27
	R 1910	35
new varieties .....	R 1910	36
quality .....	R 1906	33
orchard, station, location, varieties, etc.....	R 1908	44
cover crops .....	B 9	17
pests, list .....	R 1904	375
trees, budding seasons, etc.....	R 1909	47- 50
propagation, pruning, etc.....	B 9	8- 13
<i>Citrus medica acida.</i> See Lime.		
Climate of Hawaii .....	R 1902	329
tobacco requirements .....	B 15	27- 29
Clover, Spanish, chemical composition .....	B 13	9- 18
Clowes, F. A.		
Brief Instructions for Farm Butter Makers.	PB 31	1- 12
No kea Hooulu Ana I ke Kalo. Joint Author)	SB Kalo	1- 16
Coffee, a white man's crop .....	R 1902	313
	R 1903	411
acreage and tonnage .....	R 1903	409
bean weevil, cotton enemy .....	B 18	24
brown-eyed disease, remedies .....	PB 9	4
cost of picking and maintenance .....	R 1901	371-372
cultivation, climatic conditions favorable...	R 1901	371
	R 1903	411
fungus disease investigations .....	R 1904	464
industry, condition .....	R 1901	366-374
	R 1902	313-314
	R 1906	14
injuries by nematode worms .....	R 1905	65
insects, injurious .....	R 1904	375
	R 1908	29
marketing .....	R 1903	411
planting on Tantalus .....	R 1906	11
preparation and location of plantation ....	R 1901	370
relief for growers .....	R 1906	14
substation .....	R 1902	314
varieties .....	R 1901	371
<i>Coccinella repans.</i> See Lady bird.		
Cocoanut, injurious insects .....	R 1907	45
	R 1908	34
meal as stock food, chemical composition	B 13	13- 19
Cocoons, silk, reports 1905-06 .....	R 1906	19
<i>Colocasia antiquorum esculentum.</i> See taro.		
Conter, Frank E.		

	*Publication.	Page.
Cultivation of Sisal in Hawaii, The .....	B 4	1- 32
Vanilla Cultivation in Hawaii.....	PB 6	1- 8
Cook's hard soap emulsion as an insecticide .....	B 3	19
Cooperative experiments with territorial authorities .....	R 1904	362
fruit marketing .....	R 1910	10
PB 21		10
Copper carbonate solution for brown-eyed disease of coffee, formula .....	PB 9	6
Corn as an inter-crop for rubber .....	B 19	17
destruction by aphids .....	R 1902	324
green fly injuries .....	B 3	7
insects, injurious, remedies .....	R 1910	21
R 1908		31
yields, cultivation, etc.....	R 1903	392-395
Cotton, bollworm control .....	PB 32	1- 8
breeding, propagating and selecting .....	R 1910	62
culture, budding, etc.....	R 1909	71- 74
condition of industry .....	R 1902	322
enemies, parasites .....	B 18	25- 27
experiments, variety tests, etc.....	R 1908	15, 83
R 1909		69
experiments at Kunia and Waipahu .....	R 1910	57- 60
favorable conditions in Hawaii .....	R 1903	407
fertilizer experiments .....	R 1909	65
fiber, quality, etc.....	PB 24	1
fiber, tests .....	R 1906	10
industry of Hawaii .....	R 1910	57
insects, beneficial .....	B 18	24- 25
insects, injurious, remedies .....	R 1910	22
R 1908		18, 30
investigations, 1909 .....	R 1909	11
preliminary report on experiments .....	PB 24	1- 16
quality of early product .....	R 1902	322
stem-borer, remedies .....	B 18	23
varieties grown .....	R 1902	322
variety tests, cultural notes, etc.....	PB 24	1- 16
yields, growth, crossing, etc., of different varieties .....	R 1910	13
Cover crops for avocado orchards .....	B 25	17
orchards .....	R 1908	13, 42
R 1909		54
Cow peas as a cover crop for orchards .....	R 1908	43
culture, harvest and feeding, varieties..	B 23	17- 18
wild, chemical composition .....	B 13	9- 18
Crops, rotation .....	B 2	11
Croton, insects, injurious .....	R 1908	35
Cultivation, rubber .....	B 19	18

	*Publication.	Page.
Curcubits, injuries by melon fly .....	R 1907	31
injuries by stinging fly .....	R 1902	324
Curing, tobacco .....	B 15	20- 21
Cuttings, Ceara rubber, propagation .....	B 16	13
Cutworm, injurious to garden and field crops ....	B 3	7
injurious to sweet potato .....	B 22	10
injurious to cotton, remedies .....	B 18	7- 9
injurious to rice .....	R 1909	18
injurious to tobacco .....	R 1909	18
injurious to vegetables .....	R 1901	373
insecticides .....	B 3	16- 17
life history .....	B 18	7- 9
prevalence .....	R 1902	324
<i>Cyrtolima criniticornis</i> , injurious to black wattle .....	B 11	16
Cypress girdler, injurious to sugar cane and Monte- rey cypress .....	R 1904	374

## D.

<i>Dactylopius</i> sp., injury to trees .....	R 1902	325
<i>Dacus curcubita</i> . See Melon fly.		
Dairy investigations, necessity .....	R 1903	401
products, prospects for industry .....	R 1901	373
Dairying, methods of milking .....	B 8	1- 15
Deciduous fruits, condition of growth, insects, etc.	R 1909	18
outlook for production at high .....	R 1908	50
elevations .....	R 1910	39
plantings .....	R 1907	59
Demonstration farms, establishment and use ....	R 1910	9
<i>Desmodium trifolium</i> , chemical composition .....	B 13	9- 18
Die-back disease of citrus, cause and treatment ...	B 9	24
Diseases of animals .....	R 1903	401
of chickens .....	B 1	10- 24
of plants .....	R 1905	64
Dogs, insect pests .....	R 1908	37
Dragon flies, enemies of mosquitoes .....	B 6	23- 24
Duck farming, condition of industry .....	R 1901	377

## E.

Eggs, importations and value .....	B 1	7
Entomological department, organization .....	R 1903	414
Entomological investigations, summary .....	R 1902	323
	R 1903	414
	R 1905	18
	R 1906	16
	R 1907	14
	R 1908	11
	R 1909	11
	R 1910	17



	*Publication.	Page.
library, accessions, 1906 .....	R 1906	31
library, accessions, 1907 .....	R 1907	48
library, accessions, 1908 .....	R 1908	38
organizations in Hawaii .....	R 1905	38- 40
publications, 1904 .....	R 1904	373
<i>Epitrix parvula</i> . See Flea-beetle.		
Entomologists' reports .....	R 1903	414-418
	R 1904	372-379
	R 1905	38- 59
	R 1906	18- 32
	R 1907	25- 51
	R 1908	17- 41
	R 1909	17- 46
	R 1910	19- 24
Entomology of the Hawaiian Islands, bibliography.	R 1905	50- 59
Experiment station, establishment .....	R 1901	361
orchards, development .....	R 1909	52
Experiments, miscellaneous .....	R 1905	62

## F.

False budworms, injurious to tobacco, remedies ...	B 10	9- 10
Farmers' Institute of Hawaii, organization .....	R 1902	327
meetings and officers .....	R 1903	413
publication of papers .....	R 1903	413
Feeding stuffs, concentrated and commercial, com- position .....	B 13	12- 19
Hawaiian and others, comparison..	B 13	14- 15
Hawaiian, chemical composition ...	B 13	1- 24
	R 1907	63
Fermenting tobacco, process .....	B 15	22- 24
Fertilizer, effect on composition of rice .....	B 21	14- 26
for avocados .....	B 25	18
for bananas .....	B 7	25- 26
for Ceara rubber .....	B 16	12- 13
materials, analyses .....	R 1908	60
Fiber plants, acreage .....	R 1902	314
Fig industry, condition .....	R 1902	319
injurious insects .....	R 1908	33
Fish for controlling mosquitoes .....	B 6	24- 25
Flea-beetle, injurious to tobacco .....	B 10	5
Fleas, distribution, life cycle, remedies .....	R 1907	36
Floral honey, source .....	B 17	9
Fodders, lime content, etc. ....	PB 15	1
Fodders, miscellaneous, chemical composition .....	R 1908	58
	B 13	1- 24
	R 1905	25
Foot-rot, citrus, description and treatment .....	B 9	22- 23

	*Publication.	Page.
Forage crops, Hawaiian leguminous, composition . . .	B 13	1- 24
crops, native . . . . .	R 1901	373
plants, comparative tests . . . . .	R 1904	464
plants, experiments . . . . .	R 1903	398-400
Forestry, need for investigations . . . . .	R 1901	379
Forest insects . . . . .	R 1905	49
reserves, federal management . . . . .	SB Grazing	64
trees, distribution of seed . . . . .	R 1902	326
trees, insects, injurious . . . . .	R 1907	46
	R 1908	35
Formalin fumigation for pineapple rot . . . . .	B 14	8- 26
solution for controlling potato blight . . .	R 1903	395
use for controlling <i>Thielaviopsis ethacetica</i> . . . . .	R 1907	17
Foul brood of bees, regulation . . . . .	R 1907	41
Fruits, deciduous, on Hawaii . . . . .	R 1907	18
Fruit marketing investigations, cooperation, mar-		
kets, etc. . . . .	PB 21	10
	R 1909	47
shipping experiments, ventilation, etc. . . . .	PB 21	3
	R 1907	16, 52
	R 1908	42
shipping experiments in cold storage . . . . .	R 1905	60- 61
Fullaway, David T.		
Insects Attacking the Sweet Potato in Hawaii	B 22	1- 31
Insects of Cotton in Hawaii . . . . .	B 18	1- 28
Report of Entomologist, 1909 . . . . .	R 1909	17- 45
Report of Entomologist, 1910 . . . . .	R 1910	19- 24
Use of Insecticides in Hawaii, The . . . . .	PB 27	1- 8
Fuller's rose beetle, life history, natural enemies and		
remedies . . . . .	PB 14	1
Fumigation, formaldehyde for pineapple rot . . . . .	B 14	8- 26
for insects . . . . .	B 3	20- 21
use of hydrocyanic acid gas . . . . .	R 1909	53
Fungus diseases of mango, description . . . . .	B 12	22- 23
diseases, proposed report on . . . . .	R 1907	10
Fungicides and insecticides, formulas . . . . .	B 25	24
<i>Furcraea gigantea</i> . See Malina.		
<i>Fusarium</i> sp. . . . .	B 7	31- 32

## G.

Goats, injurious to sisal plants . . . . .	B 4	30
Goat raising in the United States . . . . .	SB Grazing	82
Grape, condition of industry . . . . .	R 1902	321
cooperative experiments . . . . .	R 1906	12
growing in Hawaii, varieties, pests, reme-		
dies, etc. . . . .	SB Grape 1-15 (Port)	

	*Publication.	Page.
insects, injurious .....	R 1906	30
	R 1908	33
introductions .....	R 1907	58
leaf injuries by Japanese beetle .....	B 3	9
fruit, varieties, description .....	B 9	29- 30
Grass and forage plants, distribution of seed .....	R 1906	11
Grasses, Hawaiian, chemical composition .....	B 13	7- 24
tests of varieties .....	R 1904	364
	R 1905	11
	R 1903	398
Grazing industry in the United States, history ....	SB Grazing	6- 90
investigations .....	R 1902	311
lands of the United States, area, etc. ....	SB Grazing	17
lands of the United States, effect of over- grazing .....	SB Grazing	49
lands of the United States, present condi- tion .....	SB Grazing	45
Green fly, injurious to corn .....	B 3	7
manuring crops for rice rotation .....	R 1910	55
plants, tests of varieties .....	R 1909	75
Guava, injurious insects .....	R 1908	33
use in manufacture of jellies, etc. ....	R 1902	320
wild, injurious insects .....	R 1908	36
Guinea grass, chemical composition .....	R 13	8- 18

## H.

Harvesting tobacco leaf .....	B 15	19- 20
Hawaii Agricultural Experiment Station, functions, etc. ....	PB 18	1- 14
Hawaiian entomology, bibliography .....	B 1905	50
honey, types, chemical composition ...	B 17	8- 11
Hay, salt marsh rice and upland rice for .....	R 1908	79- 81
<i>Heliothis obsoleta</i> . See False budworm.		
Hellebore as an insecticide .....	B 3	17
Henequen. See Sisal.		
Hibiscus, injurious insects .....	R 1908	34
<i>Hibiscus sabdariffa</i> . See Roselle.		
Hides, tanning process .....	B 11	13- 14
Higgins, J. E.		
Avocado in Hawaii, The. (Joint Author) ..	B 25	1- 48
Banana in Hawaii, The .....	B 7	1- 52
Citrus Fruits in Hawaii .....	B 9	1- 32
Cultiva da Uva, A .....	SB Grape	1- 15
Fruit Marketing Investigations, 1907 .....	PB 21	1- 27
Mango in Hawaii, The .....	B 12	1- 32
Marketing Hawaiian Fruits .....	B 14	1- 44
Pineapple Shipping Experiments, 1908 ....	PB 22	1- 6

	*Publication.	Page.
Reports of the Horticulturist, 1905, 1906, 1907, 1908, 1909, 1910.		
Shield Budding the Mango .....	B 20	1- 16
Hilo grass, chemical composition .....	B 13	8- 20
Hogs, insects, injurious .....	R 1908	36
Holt, Valentine S.		
Avocado in Hawaii, The. (Joint Author).	B 25	1- 48
Honey, algaroba, source and chemical composition.	B 17	13- 16
chemical composition, classification, uses, etc.....	R 1905	27
	R 1907	14, 39
	R 1906	24
	B 17	1- 21
market .....	B 17	11- 12
plants and trees useful to bees .....	B 17	8- 11
	R 1905	41
	R 1908	24
production in Hawaii .....	R 1905	40
Honeydew, collection by bees .....	R 1908	26
honey, feed for wax .....	R 1907	15
source and composition .....	B 17	10
Honohono, chemical composition .....	B 13	10- 19
Horn fly affecting live stock, remedies .....	R 1908	18
fatality to stock .....	R 1902	325
Horses, insects, injurious .....	R 1907	47
	R 1908	36
Horses, raising in the United States, history.....	SB Grazing	79
wild in the West .....	SB Grazing	31
Horticultural accessions, list .....	R 1906	35
exhibit .....	R 1907	59
investigations, summary .....	R 1904	379
	R 1906	17
	R 1907	16- 18
	R 1908	12
	R 1909	13
	R 1910	16
products, list .....	R 1905	63
records, maps, etc.....	R 1909	51
records, system .....	R 1906	51
reports .....	R 1905	59- 66
	R 1906	33- 36
	R 1907	52- 66
	R 1908	42- 50
	R 1909	47- 57
	R 1910	25- 40
Household insects .....	R 1904	377
	R 1908	37

	*Publication.	Page.
Hunn, Chester J.		
Avocado in Hawaii, The. (Joint Author) ..	B 25	1- 48
Hydrocyanic acid gas as an insecticide .....	B 3	21- 24
	R 1909	53

## I.

<i>Icerya purchasi</i> , injury to black wattle .....	B 11	16
Industries for Hawaii, list .....	R 1901	378-379
Insect enemies of avocado, control .....	B 25	21
enemies of black wattle .....	B 11	16
enemies of Ceara rubber, control .....	B 16	30
citrus fruits, remedies .....	B 9	25- 27
enemies of mango .....	B 12	24- 25
enemies of tobacco, remedies .....	B 10	1- 16
injury in Hawaii, cause and control .....	R 1907	26
pests, biting, remedies .....	B 3	15
pests, cotton .....	B 18	1- 27
pests, household .....	R 1902	325
pests, list of practical remedies .....	PB 27	6
pests, prevalence of .....	R 1901	378
pests, precautionary measures .....	B 3	8
pests, sucking, remedies .....	B 3	21- 25
Insecticidal gases, formulas and use .....	PB 27	4
Insecticide experiments .....	R 1903	416
Insecticides and fungicides, formulas, directions...	B 25	24
for injurious insects, requirements....	R 1902	34
formulas, directions .....	B 3	15- 25
	PB 27	1
Insects attacking sweet potato .....	B 22	1- 31
beneficial, introduction .....	B 3	7
household .....	R 1904	373-379
injurious, Hawaiian, list .....	R 1905	46
	R 1906	28
	R 1907	43
	R 1904	377
injurious, measures for control .....	R 1902	323
injurious, parasites .....	R 1902	323
injurious, remedies for .....	R 1903	416
injurious, rubber seed beds .....	B 16	9- 10
injurious to barley, remedies .....	R 1910	22
injurious to cotton, remedies .....	R 1909	17
	B 18	1- 28
	R 1910	22
injurious to cultivated crops .....	R 1901	78
injurious to field crops .....	R 1903	415
injurious to field crops, remedies .....	R 1910	21
injurious to forest trees .....	R 1905	49
injurious to jack beans, remedies .....	R 1910	22

	*Publication.	Page.
injurious to pineapples, remedies .....	R 1908	27
	R 1909	17
injurious to plants, revised list .....	R 1908	29
injurious to sugar cane .....	R 1904	374
injurious to sweet potatoes .....	B 22	31
injurious to tobacco seed beds, remedies...	B 15	16- 17
injurious to wheat, remedies .....	R 1910	22
Inter-crops for rubber plantations .....	B 19	17- 18
Ipomoea, insect enemies, revised list .....	R 1908	35
Irrigation by rain water, need .....	R 1905	10
in Hawaii .....	R 1902	326
system, station grounds .....	R 1907	9

## J.

Jack bean, description and cultural methods .....	B 23	19
insect enemies, remedies .....	R 1910	22
Japanese rose beetle, destruction of roses .....	B 3	7
injury to black wattle .....	B 11	16
injury to cotton .....	B 18	11
injury to tobacco, remedies..	B 10	13- 14

## K.

Kafir corn, chemical composition .....	B 13	7- 20
Kelley, W. P.		
Assimilation of Nitrogen by Rice, The ....	B 24	1- 20
Influence of Manganese on the Growth of Pineapples, The .....	PB 23	1- 14
Management of Pineapple Soils, The .....	PB 29	1- 10
Reports of the Chemist, 1909, 1910.		
Study of the Composition of the Rice Plant, A. (Joint Author).....	B 21	1- 51
Kerosene emulsion, formula, use .....	B 3	17- 18
	B 9	26- 27
use against avocado mealy bug	PB 8	5
use against pineapple scale ...	PB 10	5
Ki, chemical composition .....	B 13	10, 19
Kiawe beans as stock food, composition .....	B 13	13- 19
meal as stock food, composition .....	B 13	13- 19
Klu bean or cassie flower for perfume .....	R 1901	377
chemical composition .....	B 13	11- 19
Krauss, F. G.		
Leguminous Crops for Hawaii .....	B 23	1- 31
Methods of Milking .....	B 8	1- 15
Peanuts in Hawaii .....	PB 28	1- 11
Preliminary Report on Rice Investigations, A	PB 19	1- 8
Preliminary Report on Cotton Experiments..	PB 24	1- 16

Reports of the Agronomist, 1907, 1908, 1909,  
1910.

Kula, Maui, as a corn section .....	R 1903	392
Kukaipua grass, chemical composition .....	B 13	8- 20

L.

Lady birds, enemy of leaf hopper .....	B 5	23
Land, transfer to Dept. of Agriculture .....	R 1910	9
Latex, effect of nitrate of soda on flow .....	B 19	13- 15
Ceara, coagulation .....	B 16	17- 18
tubes, distribution in rubber .....	B 19	16- 17
water bags for washing .....	B 19	12- 13
yields from young Ceara trees .....	B 19	7- 10
Leaf hopper, corn .....	B 5	7
fungus disease of .....	B 5	24
injury to black wattle .....	B 11	16
injury to sugar cane .....	R 1904	374
B 5		17- 20
investigations .....	R 1904	364
sugar cane, life history, natural enemies, remedies, etc.....	B 5	7- 29
Leaf miner, injury to sweet potato .....	B 22	13
injury to sugar cane .....	R 1904	374
Leaf roller, injury to sweet potato .....	B 22	19
Tortricid, injury to sweet potato, life history, remedies .....	B 22	23
Legumes, chemical composition .....	B 13	9- 18
composition and fertilizing constituents..	B 23	31
Leguminous crops for Hawaii .....	B 23	1- 31
Lemon picking, cultivation and curing.....	B 9	28- 29
scab, cause, treatment .....	B 9	24
varieties .....	B 9	29
Library establishment .....	R 1902	309
Lice, injury to poultry .....	B 1	11
Lichens, citrus, cause and treatment .....	B 9	23- 24
Lime an essential factor in forage .....	PB 15	1
as a fertilizer for bananas .....	B 7	25- 26
in Hawaiian feeding stuffs .....	B 13	19- 23
Limes, descriptions, uses and varieties .....	B 9	30- 31
localities grown, description, value .....	R 1902	321
Limu. See also <i>Algae</i> and <i>Seaweed</i> .		
Limu, cultivation, gathering preparation, uses ....	R 1906	63- 86
edible list .....	R 1906	63- 86
Litchi, fruit, value .....	R 1905	63
grafting for early production .....	R 1910	38
introduced varieties .....	R 1909	56

	*Publication.	Page.
Live stock, affected by horn fly, remedies .....	R 1908	18
affected by liver fluke, remedies .....	PB 11	1- 8
insects injurious .....	R 1904	378
insects injurious .....	R 1907	15
insects injurious .....	R 1908	36
Liver fluke, life history, location, remedies .....	PB 11	2
injury to cattle .....	R 1903	401
prevalence .....	PB 11	1
prevalence in 1902 .....	R 1903	401-402
Locusts, injury to range in the United States .....	SB Grazing	32

## M.

McClelland, C. K.

Cultural Methods for Controlling the Cotton		
Bollworm. (Joint Author.).....	PB 32	1- 8
Maguey. <i>See</i> Sisal.		
Malina, a possible fiber plant .....	R 1902	315
Manganese, influence on growth of pineapples ...	PB 23	1
<i>Mangifera indica</i> . <i>See</i> Mango.		
Mango as a commercial fruit .....	B 12	7
blight, Bordeaux mixture, formulas .....	R 1908	47
blight, description and control .....	B 12	22- 23
blight, description and control .....	B 12	7- 8
breeding .....	B 12	21
transplanting, inarching, etc.....	R 1908	45
climatic and soil requirements .....	B 12	7- 8
cultural methods, handling crop, etc.....	B 12	15- 19
cultural requirements .....	R 1902	321
diseases .....	B 12	22- 23
diseases .....	R 1904	380
food uses .....	R 1902	321
food uses .....	B 12	19- 21
fungus diseases, control .....	R 1904	380
improvement .....	R 1904	380
insect and disease control .....	R 1910	31
insects injurious .....	R 1904	376
insects injurious .....	R 1907	45
insects injurious .....	R 1906	30
insects injurious .....	R 1908	32
insects injurious .....	R 1905	47
insects injurious .....	B 12	24- 25
pests .....	R 1904	376
propagation, budding, inarching, etc.....	B 12	8- 15
propagation, budding, inarching, etc.....	R 1909	50
propagation, budding, inarching, etc.....	R 1910	30
prospects of industry .....	R 1906	33
recipes for using .....	B 12	19

\*R, Report; B, Bulletin; PB, Press Bulletin; SB, Special Bulletin.



	*Publication.	Page.
seasons of growth and fruiting .....	B 12	18
shield budding .....	B 20	1- 16
shield bud union, study .....	B 20	11- 16
shipping experiments .....	B 14	39
study of habits .....	R 1905	62
varieties, descriptions .....	B 12	25- 32
weevil, habits, life history .....	R 1905	47
hindrance to progress of mango in-		
dustry .....	R 1906	33
history, life cycle, injury and control	PB 17	1
obstacle to development of mango		
industry .....	B 14	39
survey of distribution .....	R 1907	10
Mangoes, list of varieties in station orchard .....	R 1910	32
Mangosteen, establishment in Hawaii .....	R 1905	63
	R 1910	37- 38
Manila hemp, cultivation, extraction of fiber, etc..	PB 5	1
introduction, suitable conditions for.	R 1907	58
<i>Marasmius semustus</i> .....	B 7	31
Market, banana .....	B 14	38- 44
honey .....	B 17	11- 12
papaya .....	B 14	35
pineapple .....	B 14	27
Matting sedge and rush experiments .....	R 1908	15, 82
	R 1909	75
Mealy bugs, fumigation with hydrocyanic acid gas	R 1909	53
injury to citrus fruits .....	B 9	26
injury to cotton, life history .....	B 22	11- 16
injury to sisal .....	B 4	30
insecticides .....	B 3	17- 21
Melon fly, injury to curcubits in Hawaii, history..	R 1907	30
injury to melons .....	B 3	7
injury to tomatoes .....	R 1903	397
life history .....	R 1907	31
Melons, injurious insects, revised list .....	R 1908	32
Mice, injury to sisal plants .....	B 4	30
Milking methods .....	B 8	7- 15
Millet, chemical composition .....	B 13	7- 20
Miscellaneous investigations, 1909 .....	R 1909	15
Molasscuit as stock food, chemical composition ...	B 13	13- 19
Mole cricket, injury to sugar cane .....	R 1904	374
Mongoose, enemy to chickens .....	B 1	7
Mosquito control rules (five languages).....	PB 7	1
control work, collection of top-minnows.	R 1906	25- 28
Mosquito-eating fish, introduction .....	R 1905	44
Mosquito investigations, results .....	R 1908	28
Mosquitoes and disease .....	B 6	14
breeding in salt water .....	R 1907	38

	*Publication.	Page.
cause of disease in chickens .....	B 1	11
<i>Culex pipiens</i> , breeding places, life history .....	B 6	15- 21
introduction,* distribution, life history .....	B 6	7- 11
measures for control .....	R 1905	43- 46
	B 6	25- 30
natural enemies .....	B 6	23- 25
species in Hawaii .....	R 1903	418
<i>Stegomyia fasciata</i> .....	B 6	22- 23
Mountain apple, description, use as food by Hawaiians .....	R 1906	62
Mulberry trees, experimental planting for silk culture .....	R 1907	42
injurious insects .....	R 1906	29
	R 1908	34
Mule raising in the United States .....	SB Grazing	81
Muskmelon, destruction by melon fly .....	B 3	7

## N.

Nematode worms in bananas and coffee .....	R 1905	65
Nitrate of soda, effect on flow of latex .....	B 19	13- 15
Nitrogen as a banana fertilizer .....	B 7	25
assimilation by rice .....	B 24	1- 20
Nitrogenous compounds of Hawaiian soils .....	R 1904	370-372
	R 1905	28- 38
	R 1906	38- 60

## O.

<i>Oecchia griseus</i> , parasitic on leaf hopper .....	B 5	24
Office building, new, description .....	R 1910	7
Ohia lehua, injurious insects, revised list .....	R 1908	36
Oleander, injurious insects .....	R 1908	35
Olinda bug in cane fields .....	R 1904	375
Olona fiber, description, and manufacture by natives .....	R 1902	315-318
<i>Omphale metallicus</i> , parasitic on sweet potato leaf miner .....	B 22	11
Orange aphid .....	B 9	26
cultivation, propagation, etc. ....	B 9	8- 20
diseases, treatment .....	B 9	22- 28
insect enemies .....	R 1907	45
marketing, varieties .....	B 9	20- 22
Orchard insects, remedies .....	R 1908	43
Orchards on station grounds .....	R 1908	42
	R 1906	11
	R 1907	54
Organic nitrogen in Hawaiian soils .....	R 1906	37

	*Publication.	Page.
Ornamental plants, injurious insects .....	R 1904	377
	R 1905	48
	R 1907	46
	R 1908	34
P.		
Palms, injurious insects, revised list .....	R 1908	34
Papaya as chicken feed .....	B 1	22
breeding .....	R 1910	16
monoecious and dioecious types, breeding.	R 1910	33
shipping, marketing, crates, etc.....	B 14	32- 35
types and uses .....	R 1902	320
Para grass, chemical composition .....	B 13	8- 20
Prairie dogs, injury to range .....	SB Grazing	32
fires, injury to range .....	SB Grazing	33
Parasites of Indian bollworm .....	B 3	7
	B 18	20- 21
Paris green as a bait for cutworms .....	B 10	5
as an insecticide, formula .....	B 3	13, 19
dry applications .....	B 3	15- 16
<i>Paspalum orbiculare</i> , chemical composition .....	B 13	8- 18
Peach, injurious insects, revised list .....	R 1908	33
Peanut experiments, summary of results .....	R 1908	16
Peanuts, adaptability to Hawaii conditions .....	R 1902	322
in Hawaii, yields, planting harvesting, etc.	PB 28	1
tests of varieties .....	R 1908	84
<i>Pentarthron semifuscatum</i> , parasitic on sweet potato	B 22	13
Pepper tree, injurious insects, revised list .....	R 1908	34
Peppers, cultivation and value .....	R 1908	50
Mexican, prospects for industry .....	R 1903	404
<i>Perkinsiella saccharicida</i> Kirk. See Leaf hopper.		
<i>Phlegethontius quinquemaculata</i> . See Tobacco		
hornworm.		
Phosphoric acid as a banana fertilizer .....	B 7	25
<i>Phthorimaea operculella</i> . See Tobacco splitworm.		
<i>Phytoptus oleivorus</i> . See Orange rust mite.		
Pia. See Cassava.		
Pigeon pea as a cover crop for orchards .....	R 1908	43
as a cover crop and windbreak .....	B 23	21- 23
as a windbreak for seedling nurseries.	R 1910	40
Pigweed, chemical composition .....	B 13	10- 19
Pili grass, chemical composition .....	B 13	8- 18
Pilipiliuli grass, chemical composition .....	B 13	8- 20
Pineapple canning in Hawaii .....	R 1903	406
Natal, introduction, description, etc.....	R 1907	57
plants, fumigation for insect pests .....	R 1908	27

	*Publication.	Page.
scale, prevalence and remedies .....	R 1904	376
	PB 10	1
	R 1907	14
	PB 21	16
shipping and marketing experiments ...	R 1907	16
	PB 22	1- 6
soil investigations, summary .....	R 1910	41
soils, composition, needs, management..	R 1909	58
	PB 29	1- 10
Pineapples, cause of failure in black soils .....	R 1910	15
causes of loss in shipping .....	B 14	8- 16
close versus wide planting .....	R 1902	319
composition of fruit at different stages		
of ripeness .....	R 1910	45
condition of industry .....	R 1902	318-319
	R 1903	106
development of sugar content .....	R 1910	15
experiments in shipping and marketing	B 14	7- 27
fumigation for control of fungus dis-		
eases .....	R 1907	17
fungus disease of, treatment .....	B 14	2- 26
influence of manganese on growth ....	PB 23	1
injurious insects, remedies, etc.....	R 1904	376
	R 1907	44
	R 1908	27, 32
	R 1909	17
new varieties from Florida.....	R 1908	48
wrapping for shipment .....	R 1907	17
Plantains .....	B 7	42
Plant acquisitions, 1908, list .....	R 1908	48
diseases, list .....	R 1905	64
Plant lice, Hawaiian, synopsis .....	R 1909	20
injury to corn .....	B 3	7
insecticides for control .....	B 3	17- 21
<i>Platyomus lividigaster</i> . See Lady birds.		
Poi, manufacture, use as food .....	R 1901	376
Poisoned baits, formulas .....	B 3	19- 20
Pomelo, varieties, description .....	B 9	29- 30
Potato black rot, remedy .....	R 1902	312
blight, controlling with formalin solution ...	R 1903	395
blight, remedy .....	R 1902	312
industry .....	R 1901	374-375
"quick blight," results of experiments ....	PB 3	1
Potatoes for local market .....	R 1906	10
Potash as a banana fertilizer .....	B 7	25
Poultry, injurious insects .....	R 1907	48
	R 1908	36

	*Publication.	Page.
experiments, study of diseases, etc.....	R 1901	365
products, high price, cause .....	B 1	7
Prickly pear, chemical composition .....	B 13	11- 19
Pruning Ceara rubber .....	B 16	13
<i>Pseudococcus filamentosus</i> , life history, remedies... B 18		14- 16
<i>virgatus</i> , injurious to cotton, life his- tory .....	B 18	12- 13
Pualele, chemical composition .....	B 13	10- 19
Public domain, historical sketch .....	SB Grazing	6
lands of the United States, early opinions..	SB Grazing	23
lands of the United States, general descrip- tion .....	SB Grazing	11
Publications .....	R 1903	412
	R 1904	365
	R 1905	24
	R 1906	17
	R 1907	12
	R 1908	9
Purple scale, citrus .....	B 9	25- 26
Purslane, chemical composition .....	B 13	10- 19
Pyrethum as an insecticide .....	B 3	15
Pyridin compounds in the soil, relation to agriculture	R 1906	52- 59

## R.

Rainfall in Hawaii .....	R 1902	329
Range country of the U. S.....	SB Grazing	21- 35
industry, future outlook .....	SB Grazing	89
lands. <i>See also</i> Public lands.		
lands, deterioration .....	SB Grazing	22
Rattan palms, distribution .....	R 1910	40
Red spider, injurious to cotton .....	B 18	23
Reed, Minnie.		
Economic Seaweeds of Hawaii and Their Food Values. Reprint from An. Rept. 1906.		
Refrigeration for papaya shipments .....	B 14	34- 35
versus ventilation for pineapple ship- ping .....	PB 21	23
Resin wash as an insecticide, formula .....	B 3	23- 24
use against pineapplescale .....	PB 10	5
<i>Rhizoctonia sp.</i> in tobacco seed beds, remedies ....	B 15	16- 17
Rice and rice products, chemical composition ....	R 1908	51
assimilation of nitrogen .....	B 24	1- 20
bran as stock food, chemical composition ....	B 13	13- 19
breeding experiments .....	R 1907	72
chemical investigations .....	R 1909	63
composition as affected by fertilizers .....	B 21	14- 26

	*Publication.	Page.
condition of industry .....	R 1901	377
culture experiments .....	R 1907	88
experiments in breeding, culture and fertiliza- tion .....	R 1906	15
fertilizer experiments .....	R 1909	63- 68
	R 1907	76
	R 1910	43
	R 1908	70
imports and exports .....	R 1908	67
	R 1910	51
injurious insects .....	R 1906	29
	R 1907	43
	R 1908	29
injury by cutworm .....	R 1909	18
introduced Japanese varieties .....	R 1910	12, 53
investigations, cultivation, comparison of va- rieties .....	R 1907	19, 67
	R 1908	14, 65
	R 1909	14
investigations in Japan .....	R 1910	52
investigations, preliminary report of culture, harvesting breeding, fertilization .....	PB 19	1- 8
methods of cultivation .....	R 1907	71
milling industry, condition .....	R 1908	65
nitrogen experiments .....	B 24	9- 14
plant, absorption of nutrients .....	B 21	29- 39
plant, food removed .....	B 21	20- 51
plant, influence of season on composition ....	B 21	26- 28
study of carbohydrates .....	B 21	43- 48
study of composition .....	B 21	1- 51
polish as stock food, chemical composition ...	B 13	13- 19
rotation, cover crops for .....	R 1910	55
salt marsh variety as hay, yields, etc.....	R 1909	81- 82
selection and breeding .....	R 1910	54
soils, condition .....	B 24	7
soils, composition .....	B 21	10- 11
straw, yield per acre .....	B 21	40
study of time for fertilizing .....	R 1910	12
tests of varieties .....	R 1907	69
	R 1908	67
	R 1909	68
upland variety as hay and grain crop .....	R 1908	79
yield per acre .....	B 21	40
Ripe rot, citrus, cause and treatment .....	B 9	23
banana, cause and treatment .....	R 1905	64
Roselle, cultivation and distribution of seeds .....	R 1907	18
culture, yields, etc.....	R 1905	64
	R 1906	34

	*Publication.	Page.
dry versus fresh fruit for jams, etc. ....	R 1909	14
drying experiments for shipping .....	R 1909	54
experiments .....	R 1906	10
introduction, cultivation, yields, recipes, etc.	R 1907	56
Roses, destruction by Japanese beetle .....	B 3	7
injurious insects, revised list .....	R 1908	34
Rubber, Ceara, description of tree .....	B 16	7
injurious insects, revised list .....	R 1908	35
insect enemies, remedies .....	B 16	30
	R 1906	29
latex system .....	B 16	8
propagation by cuttings, pruning..	B 16	13
seedbed enemies .....	B 16	9- 10
seed, description of .....	B 16	9
systems of tapping .....	B 16	14- 17
tapping experiments on Kauai ....	R 1907	19
	B 16	19- 27
transplanting of seedlings .....	B 16	10- 12
Rubber, cooperative experiments .....	R 1906	12
benefits .....	R 1910	17
cultivation, varieties for Hawaii .....	B 16	12- 13
	B 19	18
	R 1905	22- 23
fertilizer experiments .....	R 1910	45
intercrops for .....	B 16	12- 13
	B 19	17- 18
investigations .....	R 1908	11
	R 1909	15
Rubber, Para, pot fertilizer experiments..	R 1908	63
preparing raw product .....	B 16	18- 19
prospects of industry .....	B 16	28- 30
tapping, comparison of methods .....	B 19	10- 15
trees, distribution of latex tubes .....	B 19	16- 17
varieties in Hawaii .....	B 19	7
wild and cultivated .....	PB 13	1- 10
world's production and value .....	PB 13	1
	B 19	18- 19
yields from nearly mature trees .....	B 19	15- 16
seed, preparation for planting .....	B 16	10

## S.

Sahr, C. A.

Cultural Methods for Controlling the Cotton

Bollworm. (Joint Author)..... PB 32 1- 8

Salt in waters and soils ..... R 1907 | 62 |Scab, lemon, cause and treatment ..... B 9 | 24- 25 |Scale insects injurious to citrus ..... R 1906 | 30 |injurious to fruit trees ..... R 1902 | 325 |

	*Publication.	Page.
injurious to mango .....	B 12	24
insecticides for control .....	B 3	17- 21
Seaweed. <i>See also</i> Limus and <i>Algae</i> .		
Seaweed, chemical analyses and comparative food value .....	R 1906	61- 77
collection, preparation, etc.....	R 1906	11
industry, possibilities .....	R 1906	85- 86
Sedgwick, T. F.		
Chickens and Their Diseases in Hawaii ....	B 1	1- 24
Na Haoa No Ke Pale Ana I Ka Pala O Ke Kalo .....	PB 4	1
Preliminary Experiments with the "Quick Blight" of the Potato .....	PB 3	1
Root Rot of Taro, The .....	B 2	22
Seedbeds, Rubber .....	B 16	9
Shaddock, varieties, description .....	B 9	29- 30
Sheep, injurious insects of .....	R 1907	47
injurious insects of, revised list .....	R 1908	36
Sheep-maggot fly affecting sheep, remedies .....	R 1908	11, 21
Sheep raising in the United States, history .....	SB Grazing	73- 83
Shorey, Edmund C.		
Composition of Some Hawaiian Feeding Stuffs, The .....	B 13	1- 24
Lime an Essential Factor in Forage .....	PB 15	1- 6
Reports of the Chemist, 1905, 1906.		
Silk culture, reports on cocoons, 1905 .....	R 1906	19- 24
investigations, results .....	R 1907	41
Silkworm culture in Hawaii .....	R 1905	41- 43
Sisal, botany, history, etc.....	B 4	7- 9
fiber, chemical analysis .....	B 4	15
condition of industry, acreage .....	R 1902	314
.....	B 4	31
cultivation .....	B 4	16- 20
damaged by too much water .....	R 1902	315
fiber extracting machinery .....	B 4	24- 25
harvesting, drying and baling fiber .....	B 4	20- 24
injurious insects .....	R 1905	48
.....	R 1908	30
.....	B 4	30- 31
introduction and adaptability .....	R 1903	403-404
soils and condition of growth .....	B 4	14- 16
yield of fiber .....	B 4	25- 30
Smith, Jared G.		
All About the Hawaii Experiment Station..	PB 18	1- 14
Annual Reports, 1901, 1902, 1903, 1904, 1905, 1906, 1907.		
Black Wattle ( <i>Acacia decurrens</i> ) in Hawaii, The .....	B 11	1-16



	*Publication.	Page.
Castor Bean .....	PB 2	1
Ceara Rubber Tree in Hawaii, The. (Joint Author) .....	B 16	1- 30
Common Liver Fluke in Hawaii ( <i>Distoma hepaticum</i> ), The. (Joint Author) .....	PB 11	1- 8
Cultivation of Tobacco in Hawaii (Joint Author) .....	B 15	1- 30
Function of the Experiment Station, The. .	PB 1	1
Manila Hemp or Abaca .....	PB 5	1
Rubber in Hawaii .....	PB 13	1- 12
Tobacco Experiments in Hamakua, Hawaii. (Joint Author) .....	PB 12	1- 24
Two Plant Diseases in Hawaii .....	PB 9	1- 6
Soda arsenite of lime as an insecticide, formula ...	B 3	16- 17
Soil acidity and denitrification .....	R 1905	28
analyses .....	R 1905	27
investigations .....	R 1904	369
Soils, chemical composition .....	R 1908	61
composition and studies .....	R 1907	61
organic nitrogen content .....	R 1910	11
salt content .....	R 1906	36
tobacco .....	R 1907	62
Sooty mold, citrus, description and treatment .....	B 15	27- 29
mango .....	B 9	23
Sore head of chickens, remedies .....	B 12	23
.....	R 1902	309-310
.....	B 1	11- 13
Sorghums, Hawaiian grown, chemical composition. .	B 13	6- 20
description .....	R 1907	55
Sour sop, injurious insects, revised list. ....	R 1908	34
Sow thistle, chemical composition .....	B 13	10- 19
Soy bean as an intercrop for rubber .....	B 19	17- 18
experiments, test of varieties .....	R 1908	16, 83
varieties and uses .....	B 23	23- 27
<i>Sphenophorus obscurus</i> . See Cane borer.		
<i>Sphenophorus obscurus</i> , injurious to cane .....	R 1902	325
Sphinx, sweet potato, life history, remedies .....	B 22	11
Spiders, parasitic on leaf hoppers .....	B 5	24
<i>Spondias dulcis</i> . See Wi fruit.		
Spraying apparatus .....	B 3	13- 14
for avocado mealy bug .....	PB 8	1- 6
.....	PB 16	1- 12
mixtures .....	B 3	17- 20
success .....	B 3	12- 13
to kill noxious weeds .....	PB 27	6
Star apple, description, etc. ....	R 1907	54
Station, establishment .....	R 1901	302

	*Publication.	Page.
Station buildings and improvements .....	R 1903	391
	R 1904	361
	R 1905	10, 25
	R 1908	9
Stem borer, injurious to sweet potato .....	B 16	22
maggot, injurious to cotton seedlings .....	B 18	6
Stock. <i>See</i> Live stock.		
Stored products, insects injurious .....	R 1904	378
	R 1905	49
	R 1907	48
	R 1908	37
Strawberry, insects injurious, revised list .....	R 1908	34
Sugar cane borer, injury to sugar cane .....	R 1904	374
cultivation .....	R 1903	407-408
insects injurious .....	R 1904	374
	R 1906	28
	R 1908	29
labor for cultivation .....	R 1903	408
leaf hopper, injury to cane, remedies..	B 5	1- 29
pineapple disease, remedies .....	PB 9	1
tops, chemical composition .....	B 13	7- 20
Sulphur-soda spray, formula and use .....	B 9	27
Sweet potato, condition of industry .....	R 1901	375
cutworms affecting .....	B 22	10
insects beneficial .....	B 22	31
insects injurious .....	R 1907	43
	R 1908	31
	R 1910	24
leaf miner, life history and remedies	B 22	13
leaf roller, life history and remedies.	B 22	19
marketing experiments .....	R 1910	36
minor pests affecting .....	B 22	30
shipping experiments .....	B 14	39- 40
	R 1910	16
sphinx, life history and remedies ...	B 22	11
stem borer, life history and remedies	B 22	16
tops, composition .....	B 13	11, 17, 19
tortrid leaf roller .....	B 22	23
weevil, description and life cycle ...	R 1907	29
injuries and remedies .....	B 22	27
methods of control .....	R 1907	29

## T.

Tanbark extracts and processes .....	B 11	12- 14
production, value, etc.....	R 1905	11
Tapping experiments on Ceara rubber on Kauai..	B 16	19- 27
systems for Ceara rubber .....	B 16	14- 17

	*Publication.	Page.
Taro ( <i>Colocasia antiquorum esculentum</i> .....	B 2	1- 22
as human food .....	B 2	7
	R 1902	310
condition of industry .....	R 1901	375
	B 2	7- 8
cultural methods in use, and suggested .....	B 2	8- 18
	R 1901	375
cultivation and diseases .....	SB Kalo	1- 16
insects injurious .....	R 1905	48
	R 1908	30
irrigation and fertilizers .....	B 2	15- 20
rot, causes and treatment .....	B 2	10- 19
	R 1910	64
	PB 4	1
cooperative fertilizer experiments .....	R 1910	18
experiments .....	R 1902	310-311
	R 1903	396-397
prevalence and loss from .....	R 1901	376
	B 2	9- 12
tops, chemical composition .....	B 13	11, 17, 19
varieties .....	B 2	7
Temperature in Hawai, range .....	R 1902	330
<i>Thielaviopsis ethacetica</i> , cause, use of fumigation		
for control .....	R 1907	16
fungus disease of pineap- ple, treatment .....	B 14	8- 26
Thompson, Alice R.		
Hawaiian Honeys. (Joint Author).....	B 17	1- 22
Reports of Assistant Chemist, 1907, 1908.		
Study of the Composition of the Rice Plant,		
A. (Joint Author).....	B 21	1- 51
Thrips, cotton enemy .....	B 18	23
Ti leaves, chemical composition .....	B 13	11- 19
Tobacco baling .....	B 15	24- 25
climatic influence .....	R 1905	14
cultivation, curing, etc.....	R 1905	15- 22
	B 15	1- 29
curing barn, description .....	B 15	8- 14
curing methods .....	B 15	20- 21
experiments in Hamakua,—quality, varie- ties, value .....	R 1904	366-369
	R 1905	13- 22
	PB 12	1- 24
	R 1906	13
	R 1907	15
fermenting .....	B 15	22- 24
fertilizers and culture .....	PB 12	5
field pests, remedies .....	R 1905	16

	*Publication.	Page.
flea-beetles, remedies .....	B 10	5- 7
grading .....	B 15	21- 24
harvesting, curing and fermenting .....	PB 12	14
	R 1905	18
	B 15	19- 20
hornworms, remedies .....	B 10	10- 12
insects injurious .....	R 1904	377
	R 1905	49
	R 1908	30
	B 10	1- 16
investigations .....	R 1903	402
marketing .....	B 15	25
splitworm, remedies .....	B 10	7- 9
seedbeds, enemies .....	B 15	14- 17
soil and climatic requirements, yields ....	B 15	27- 29
soils, physical and chemical analysis .....	PB 12	4
	R 1905	13- 14
splitworm, remedies .....	B 10	7- 9
topping and suckering, transplanting ....	B 15	19
Tomato experiments, injuries from fruit fly .....	R 1903	397-398
Top minnows, collection for importation to Hawaii	R 1906	25
distribution for mosquito control...	R 1907	14
	R 1906	28
introduction and distribution .....	R 1907	38
	PB 20	1
	R 1905	44
Torpedo bugs, injurious to mangos .....	B 12	24
Tortricid leaf roller, injurious to sweet potato ....	B 22	23
<i>Touchardia latifolia</i> . See Olona.		
Transplanting, tobacco .....	B 15	17- 18
Transportation, high rates between islands .....	R 1902	313
Tree tanglefoot, injury to bark of peach and other trees .....	R 1910	39
Trees, injuries by scale insects .....	R 1902	325
Turkeys and chickens, condition of industry .....	R 1901	377

## V.

Van Dine, D. L.

Avocado Mealy-bug ( <i>Pseudococcus nipae</i> Mask.), The .....	PB 16	1- 12
Common Liver Fluke in Hawaii ( <i>Distoma hepaticum</i> ), The. (Joint Author).....	PB 11	1- 8
Fuller's Rose Beetle ( <i>Aramigus fulleri</i> Horn.).....	PB 14	1- 8
Hawaiian Honeys. (Joint Author).....	B 17	1- 22
Insect Enemies of Tobacco in Hawaii .....	B 10	1- 16
Insecticides for Use in Hawaii .....	B 3	1- 26
<i>Same</i> , revised .....		

\*R, Report; B, Bulletin; PB, Press Bulletin; SB, Special Bulletin.

	*Publication.	Page.
Introduction of Top Minnows (Natural Enemies of Mosquitoes into Hawaii . . . . .	PB 20	1- 10
Mango Weevil ( <i>Cryptorhynchus mangiferae</i> Fabr.), The . . . . .	PB 17	1- 12
Mealy-bug or "Pear Blight" of the Alligator Pear, The . . . . .	PB 8	1- 6
Mosquitoes . . . . .	PB 7	1
Mosquitoes in Hawaii . . . . .	B 6	1- 30
Pineapple Scale ( <i>Diaspis bromeliae</i> Kerner), The . . . . .	PB 10	1- 6
Reports of the Entomologist, 1904, 1905, 1906, 1907, 1908. . . . .		
Sugar Cane Leaf Hopper in Hawaii, A . . . . .	B 5	1- 29
Vanilla, condition of industry . . . . .	R 1903	402
cultivation, harvesting, yields, etc. . . . .	PB 6	1- 8
plantations . . . . .	R 1905	63
	R 1906	11
Vegetables, cutworm injuries . . . . .	R 1901	373
insects' injurious . . . . .	R 1904	376
	R 1905	48
Velvet beans, varieties and uses . . . . .	B 23	27
<i>Verrucosis</i> , citrus, cause and treatment . . . . .	B 9	24

## W.

Water bags for washing down rubber latex . . . . .	B 19	12- 13
Water grass, chemical composition . . . . .	B 13	8- 18
Watermelons, cause of scarcity . . . . .	B 3	7
Water, salt content . . . . .	R 1907	62
Water system, station lands . . . . .	R 1907	9
Wattle ( <i>Acacia mollissima</i> ) cultivation for tanbark . . . . .	R 1904	365
	B 11	1- 16
Wax from honeydew honey . . . . .	R 1907	15
Weed destruction, list of chemicals . . . . .	PB 30	2
spraying . . . . .	PB 27	6
Weeds, eradication with arsenite of soda . . . . .	PB 30	1
eradication with carbon bisulphid . . . . .	PB 25	1
	R 1909	15
used as forage, chemical composition . . . . .	B 13	10- 19
Weevil, mango . . . . .	B 12	24- 25
Weevils, injurious to sweet potatoes . . . . .	B 22	27
Whale oil soap as an insecticide . . . . .	B 3	19
Wheat, injurious insects, remedies . . . . .	R 1910	22
Leghorn, tests . . . . .	R 1908	84
White arsenic as an insecticide . . . . .	B 3	14
Wi fruit, description . . . . .	R 1905	63
Wilcox, E. V.		
Algaroba in Hawaii, The . . . . .	PB 26	1- 8

	*Publication.	Page.
Annual Reports, 1908, 1909, 1910.		
Carbon Bisulphid for Killing Weeds .....	PB 25	1- 4
Cultura da Banana, A .....	SB 1911	1- 8
Experiments in Tapping Ceara Rubber Trees	B 19	1- 20
Grazing Industry, The .....	SB 1911	1- 92
Killing Weeds With Arsenite of Soda ....	PB 30	1- 16
No Ka Hooulu Ana I Ka Maia .....	SB 1911	1- 12
No Ka Hooulu Ana I Ke Kalo .....	SB 1911	1- 16
Windbreaks for orchards .....	R 1909	54
Winds in Hawaii, direction and prevalence .....	R 1902	330
Wireworms injurious to cotton .....	B 18	6
injurious to rubber seedlings, remedies	B 16	30
Worms, nematode, injurious to bananas .....	B 7	32

## X.

<i>Xystocera globosa</i> injurious to black wattle .....	B 11	16
--	------	----

## Y.

Yard grass, chemical composition .....	B 13	8- 20
Yellow fever, caused by mosquitoes .....	B 6	14, 22
danger of introduction from Mexico	R 1907	38

## Z.

<i>Zelus perezinus</i> , parasitic on leaf hopper .....	B 5	24
---	-----	----

\*R, Report; B, Bulletin; PB, Press Bulletin; SB, Special Bulletin.